REMARKS

Claims 28, 29, 35, 37, 38, 40 – 43, 45 – 49, 51, and 54 – 59 are pending and claims 1 - 27, 30 – 34, 36, 39, 44, 50, 52, and 53 were previously cancelled. Claims 28, 29, 48, 49, and 57 are amended. No new matter has been added by virtue of the amendments, support being found throughout the specification and claims as originally filed. For example, support for the amendments to claims 28, 29, 48, 49, and 57 is found in Applicants' specification at page 32, lines 3-10.

Rejections under 35 U.S.C. §103(a)

Claims 28, 29, 38, 40, 48, 49, 51, 52, 53 and 56 are rejected under 35 U.S.C. 103(a) as allegedly being obvious over one or more of the following references: Benavides et al. (US 6,443,179 (hereinafter "Benavides") in view of Sinclair et al. (A Cell-Based Bar Code Reader for High-Throughput Screening of Ion Channel-Ligand Interactions, (2002), *Anal. Chem.*, vol. 74, pages 6133-6138 (hereinafter "Sinclair")), Pfost et al. (U.S. Patent No. 5,104,621 (hereinafter "Pfost"), Bjornson et al. (U.S. Patent No. 6,103,199 (hereinafter "Bjornson"), Crandall et al. (U.S. Patent No. 6,352,766 (hereinafter "Crandall"), DiZio et al. (U.S. Patent No. 6,455,152 (hereinafter "DiZio"), Chiu et al. (U.S. Patent No. 7,470,518 (hereinafter "Chiu"), and Stanto et al. (U.S. Patent No. 7,125,660 (hereinafter "Stanto"). For the reasons detaile below, Applicants respectfully disagree and traverses the rejection.

Because all of the foregoing rejections rely on Benavides and Sinclair in combination with other secondary references, and in the sake of brevity, Applicants will address the rejections under 35 U.S.C. 103(a) together. In particular, the Examiner alleges that Benavides describes a microfluidic device which comprises a microchannel having a length and/or width that varies to provide a time delay in delivering a separate aqueous stream at col. 12, lines 12-19 and col. 11, lines 63-67.

Applicants respectfully disagree. Nevertheless, without acquiescing to the basis of the rejection and solely to more fully and completely claim the invention, Applicants have amended the claims. As amended the claims are directed to a system comprising a macroscale device interfaced

to a microfluidic device having three or more interdigitating microchannels suitable for containing a fluid stream, wherein each of the microchannels have a length and/or width that varies to provide a time delay in delivering a separate aqueous stream. Benavides fails to describe a microfluidic device having three or more microchannels where each microchannel has a distinct length and/or width to provide a time delay in delivering a separate aqueous stream.

Benavides at col. 12, lines 12-19 recites:

> The outline or footprint of device **100** can be rectangular or square, having typical dimensions of 3 mmx6 mm, or 5 mmx5 mm. Device **100** can include electrical bonding pads **102**. Pads **102** can be disposed on the opposite side from fluidic ports **101**. Fluidic inlet/outlet ports **101** can be located on either side of device **100**. Device **100** can be electrically interconnected to package **11** by wirebonds **104**, or other well-known interconnection schemes.

This section of Benavides merely provides that different microfluidic devices can be different sizes and that inlet/outlet ports can be located on either side of a given microfluidic device. At best, this implies that the microchannels of one microfluidic device may have a different length compared to the microchannels in a differently sized microfluidic device. However, this does not describe a single microfluidic device having three or more microchannels where the length and/or width of each microchannel is different as claimed. Moreover, this section does not teach or suggest a microfluidic device having three or more microchannels each varying in length and/or width in order to provide a time delay in delivering a separate aqueous stream.

Benavides col. 11, lines 63-67 recites:

> Device **100** can comprise inlet and outlet fluidic ports **101** (not illustrated) for applying and removing fluids. The diameter of these fluidic ports can be about 100 microns, and the ports can be spaced about 1 mm apart.

This section of Benavides merely provides that the microfluidic ports can be about 100 microns in diameter. This section is completely silent regarding the width of microchannels. Moreover, even if the diameter of a port is related to the width of a microchannel, and it is not, this still does not teach or suggest a microfluidic device having three or more microchannels where each microchannel has a distinct width because this statement is consistent with all of the ports in a given microfluidic device having identical diameters, namely about 100 microns. A statement that fluidic

ports can be about 100 microns does not teach or suggest variability in port diameter in a given microfluidic device. Furthermore, this does not teach varying microchannel width so as to provide a time delay in delivering a separate aqueous stream.

None of Sinclair, Pfost, Bjornson, Crandall, DiZio, Chiu, or Stanto cure the deficiency of Benavides, because none of these references, either individually or in combination, teach or suggest a microfluidic device having three or more interdigitating microchannels suitable for containing a fluid stream, wherein each of the microchannels have a length and/or width that varies to provide a time delay in delivering a separate aqueous stream. None of Sinclair, Pfost, Bjornson, Crandall, DiZio, Chiu, and Stanto, when combined with Benavides, teaches a system comprising the microfluidic device as claimed. Accordingly, Applicants request withdrawal of the rejection and allowance of the claims.

The Examiner alleges that Benavides teaches a macroscale device that contains gas and a microfluidic device that contains fluid at col. 11, lines 52-54. Applicants respectfully disagree. Benavides col. 11, lines 52-54 recites:

> Electro-microfluidic device **100** can comprise both active an electrical and fluidic elements. Fluids processed by the device **100** can be liquid, gaseous, or a combination of both.

This refers solely to the microfluidic device (**100**) and teaches that the microfluidic device may process fluids that can be liquid, gaseous, or a combination of both. However, Benavides does not teach or suggest a system where the macroscale device contains gas and the microfluidic device contains fluid because Benavides is silent regarding whether the macroscale device contains gas.

In sum, the cited references do not teach or suggest the claimed invention. Accordingly, Applicants respectfully request that the rejections be withdrawn.

Double Patenting

The Examiner argues that if claims 28 and 29 are found allowable, then claims 48, 49, and 57 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. The Examiner argues that "when two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one

claim to object to the other as being a substantial duplicate of the allowed claim." (Office Action, p. 12). Applicants respectfully traverse the rejection.

The claims are directed to different embodiments, and are not unnecessarily duplicative. However, in the interest of advancing prosecution, should claims 28 and 29 be allowed, applicants would consider amending or canceling any claims that would be duplicates of the allowed claims under 37 CFR 1.75.

The Examiner argues that claims 28, 29, 48, 49, and 57 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 3 of Owar et al., (US Patent No. 7,563,614 (hereinafter "Owar")) in view of Benavides. Upon notification of otherwise allowable subject matter in the instant case, Applicants will address the double patenting rejections by filing a terminal disclaimer if appropriate. Applicants respectfully request that the rejection be held in abeyance until after the claim amendments and remarks are considered.

CONCLUSION

Applicants believe that the amendments herein put the claims in condition for allowance.

Should the Examiner wish to discuss any of the amendments and/or remarks made herein, the undersigned attorney would appreciate the opportunity to do so.

The Commissioner is hereby authorized to charge any fees that may be required, or credit any overpayment to Deposit Account No. 04-1105.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

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Respectfully submitted,

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